

$\{ \mathbf{f}_1, \mathbf{f}_2, \dots, \mathbf{f}_n \}$ is a basis for V if and only if $\{ \mathbf{f}_1, \mathbf{f}_2, \dots, \mathbf{f}_n \}$ is a linearly independent set in V and $\mathbf{f}_1, \mathbf{f}_2, \dots, \mathbf{f}_n$ span V .

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In order to pronounce the signal with the strongest signal, the weighting coefficients (x,y) are controlled to maximize the output signal of the adder (18) under the constraint that the sum of the squares of the weighting coefficients is equal to a constant.